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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,363	10/14/2003	Joseph Tak Ming Kwok	A-76718/DNM	6709

34299 7590 06/14/2005

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EXAMINER	
NGUYEN, THANH NHAN P	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EF

Office Action Summary	Application No.	Applicant(s)	
	10/686,363	KWOK, JOSEPH TAK MING	
	Examiner	Art Unit	
	(Nancy) Thanh-Nhan P. Nguyen	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to Amended dated 3/21/2005.

2. Claims 1-6 are pending for the examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flynn U.S. Patent No. 5,815,228 in view of Yoshida et al U.S. Patent No. 5,680,188.

Referring to claims 1, Flynn discloses in a liquid crystal display apparatus having a liquid crystal assembly including liquid crystal material (18) sandwiched between a pair of transparent plates (10, 12) which carry patterned electrodes (20, 28) which provide the desired liquid crystal display; the display apparatus further including front (14) and rear (16) polarizing layers having transmission axes aligned or rotated with respect to each other; and further including a reflector (32) for reflecting ambient incident light on front layer back through rear polarizing layer and liquid crystal assembly and front polarizing layer to a viewer; the improvement comprising a layer (60) between rear polarizing layer and reflector, [see fig. 8].

Flynn lacks disclosure of the layer including fluorescent material responsive to ambient incident light to emit a specific wavelength to provide a specific color for display.

Yoshida et al discloses a layer (201) including fluorescent material (203) responsive to ambient incident light to emit a specific wavelength to provide a specific color for display, [see fig. 7; col. 10, lines 34-43], for the benefit of having higher the intensity of light colored, [see col. 11, lines 34-36], and for the benefit of being able to achieve a color display with high luminance, [see col. 12, lines 6-9]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have a layer between rear polarizing layer and reflector, wherein a layer including fluorescent material for the benefit of having higher the intensity of light colored, and for the benefit of being able to achieve a color display with high luminance.

Referring to claim 2, Flynn lacks disclosure of the fluorescent layer also includes phosphorescent material.

Yoshida et al discloses the fluorescent layer (301) also includes phosphorescent material (304), [see fig. 13], for the benefit of having light emitted from the phosphorescent material (304) into the fluorescent layer (301) even after light ceases to be incident on the liquid crystal display device, thereby causing the liquid crystal display device to perform a color display using fluorescent light emitted from the fluorescent layer (301), [see col. 15, lines 65-67; col. 16, lines 1-5]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to

have the fluorescent layer also includes phosphorescent material for the benefit of having light emitted from the phosphorescent material into the fluorescent layer even after light ceases to be incident on the liquid crystal display device, thereby causing the liquid crystal display device to perform a color display using fluorescent light emitted from the fluorescent layer.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flynn in view of Yoshida, and further in view of Noble U.S. Patent No. 4,521,775.

Referring to claim 3, Flynn lacks disclosure of the multiplexing driver for driving patterned electrodes with a duty cycle of at least ½.

Noble discloses the multiplexing driver for driving patterned electrodes with a duty cycle of at least ½ for the benefit of maintaining reliability while obtaining satisfactory contrast ratios, [see col. 1, lines 37-42]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use multiplexing driver for driving patterned electrodes with a duty cycle of at least ½ for the benefit of maintaining reliability while obtaining satisfactory contrast ratios.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flynn in view of Yoshida, and further in view of Dalisa et al U.S. Patent No. 5,076,668.

Referring to claim 4, Flynn lacks disclosure of the fluorescent layer is printed on the reflector.

Dalisa et al discloses the fluorescent layer (54) is printed on the reflector (55), [see fig. 2; col. 8, lines 2-4], for the benefit of increasing brightness, [see col. 8, lines 6-9]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the fluorescent layer printed on the reflector for the benefit of increasing brightness.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flynn in view of Yoshida, and further in view of Ouderkirk et al U.S. Patent No. 6,124,971.

Referring to claim 5, Flynn lacks disclosure of the reflector composed of translucent material.

It was well known that the reflector composed of translucent material would function as a transflective optical layer (or transflector) to utilize the ambient light (in reflective mode) or backlight (in transmissive mode) for the benefit of increasing efficiency and brightness in liquid crystal display device, as evidenced by Ouderkirk, [see abstract]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the reflector composed of translucent material for the benefit of increasing efficiency and brightness under both ambient and supplemental lighting conditions in visual display applications.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flynn in view of Yoshida, and further in view of Kusumoto et al U.S. Patent Application Publication No. 2004/0137224.

Referring to claim 6, Flynn lacks disclosure of the rear polarizing layer composed of a reflective polarizer film.

Kusumoto et al discloses the polarizing layer composed of a reflective polarizer film to make a liquid crystal display, etc. to display by reflecting incident light from a visible side (display side). Therefore, the light sources such as backlight need not be built in, and thus the liquid crystal display can be thinner, [see paragraph 0030]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have rear polarizing layer composed of a reflective polarizer film for the benefit of saving power, and making the liquid crystal display thinner.

Response to Amendment

The declaration under 37 CFR 1.132 filed 3/21/2005 is sufficient to overcome the rejection of claim 1 based upon the differences in behavior and characteristics between phosphorescent materials and fluorescent materials.

Response to Arguments

Applicant's arguments, see pages 1-2, filed 3/21/2005, with respect to the rejection(s)of claim(s) 1 under 35 U.S.C 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further

consideration, a new ground(s) of rejection is made in view of Yoshida et al U.S. Patent No. 5,680,188.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Flynn U.S. Patent No. 5,815,228 discloses a liquid crystal display device comprising a layer between rear polarizing layer and reflector.

Yoshida et al discloses U.S. Patent No. 5,680,188 disclose a layer including fluorescent material responsive to ambient incident light to emit a specific wavelength to provide a specific color for display, and also discloses the fluorescent layer including phosphorescent material

Noble U.S. Patent No. 4,521,775 discloses a multiplexing driver for driving patterned electrodes with a duty cycle of at least ½.

Dalisa et al U.S. Patent No. 5,076,668 discloses the fluorescent layer is printed on the reflector.

Ouderkirk et al U.S. Patent No. 6,124,971 discloses a reflector composed of translucent material.

Kusumoto et al U.S. Patent Application Publication No. 2004/0137224 discloses a polarizing layer composed of a reflective polarizing film.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P. Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on M-F/9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 10, 2005
TN

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SUPERVISORY PATENT EXAMINER
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